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Landscape-Level Mitigation

From Greenprints to RAMP:
A multiple benefit approach

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July 15, 2014

The Problem

- Population increase
  - Infrastructure development
  - Increased impact on natural resources
  - Increased demand for natural production
- Climate change
  - Stress on ecosystems

- Land use and infrastructure planning focuses primarily on the built environment without sufficient regard for natural and agricultural resources

Goal and Hypothesis

- Goal: to avoid impacts on California's precious ecosystems from infrastructure development and to develop funding streams for conservation
- We can do this by:
  - integrating conservation early in infrastructure planning and development and land use decisions
- Through:
  - Regional Greenprints and RAMP

What and Why Mitigation?

- Infrastructure projects must compensate for unavoidable impacts to species, habitat and waters

  - Mitigation hierarchy:

    Avoid – Minimize – Compensate

- Typically 5-30% of the cost of the project

- Opportunity: provide “action agencies” with habitat to protect or restore

Traditional or Unplanned Mitigation Approaches Ineffective

- Infrastructure:
  - Inefficient project-by-project analysis
  - Costly and difficult to manage mitigation sites
  - Delayed project delivery

- Environment:
  - Isolated islands of habitat, disconnected from natural systems
  - Lost opportunities due to conversion
  - Missed opportunities for other benefits

Trend →landscape scale mitigation

- Habitat Conservation Plans/Natural Communities Conservation Plans
- Eco-logical and Integrated Ecological Framework
- Regional Advance Mitigation Planning

Common elements

- Early integration of conservation data into infrastructure project planning
- Drive mitigation to implement a scientifically developed conservation greenprint
- Mitigation in advance of impacts

“Both/And”

Infrastructure Capacity:

- Fosters coordination among agencies and with public
- Plans in advance – better project predictability
- Faster project delivery
- More cost effective

Environmental Stewardship:

- Promotes avoidance and minimization
- More effective conservation
- Contributes to climate goals

Published reports – the theory

- Larger and more effective conservation of high priority ecosystems
- Better financial and ecological certainty
- Reduced risk to both infrastructure agencies and regulatory agencies
- Reduced costs in the short and long term
- More efficient

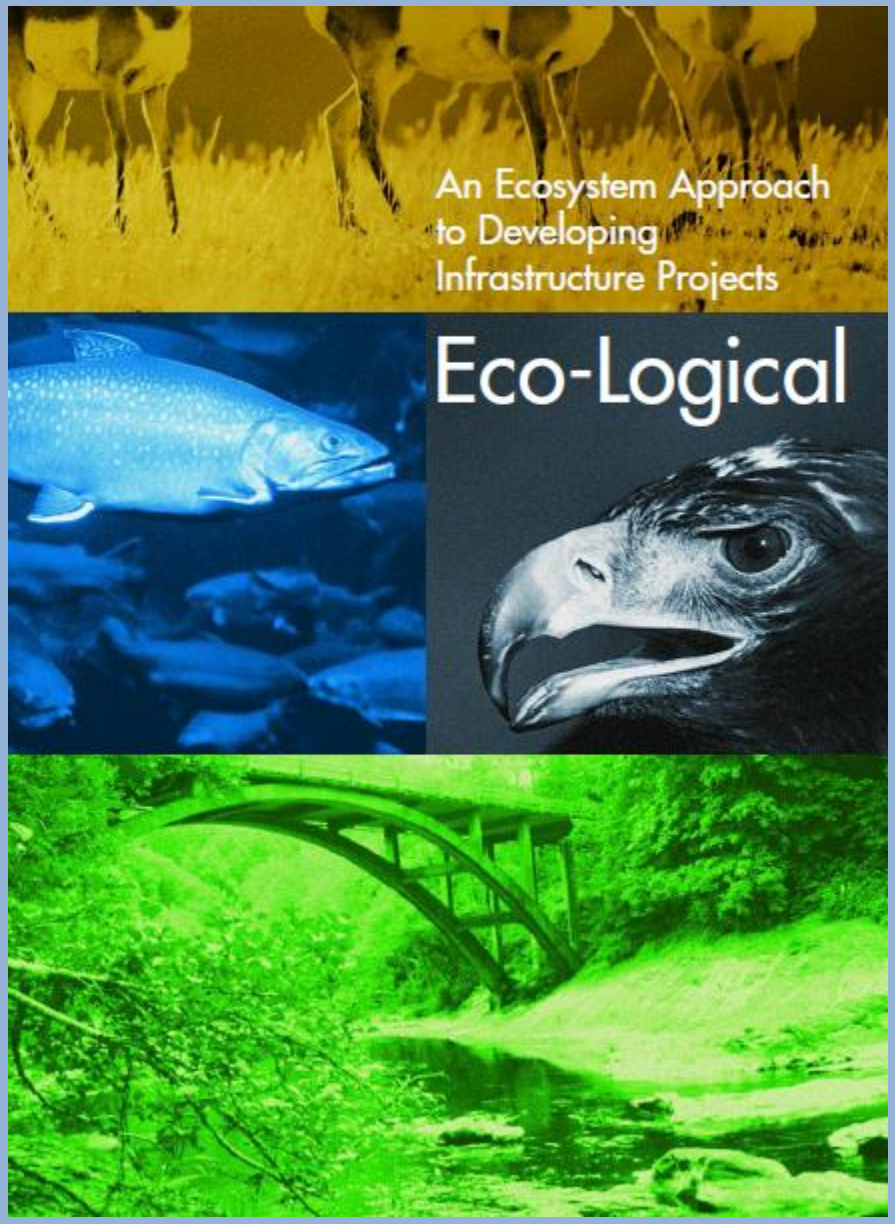
EARLY MITIGATION FOR NET ENVIRONMENTAL BENEFIT:
Meaningful Off-Setting Measures for Unavoidable Impacts

Requested by: American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on the Environment

Prepared by: Marie Venner, Venner Consulting
In association with Parsons Brinckerhoff

September 2005

- Multiple agency collaboration and cooperation
- Safer, improved infrastructure
- Improved watershed and ecosystem health
- Increased connectivity and conservation



FHWA 2006

Integrated Ecological Framework

Shared conservation and restoration vision = Regional Ecological Framework

Federal Highway Administration
SHRP2 C06A
Guide to the Integrated Ecological Framework
The Strategic Highway Research Program 2
Transportation Research Board of
The National Academies
2010

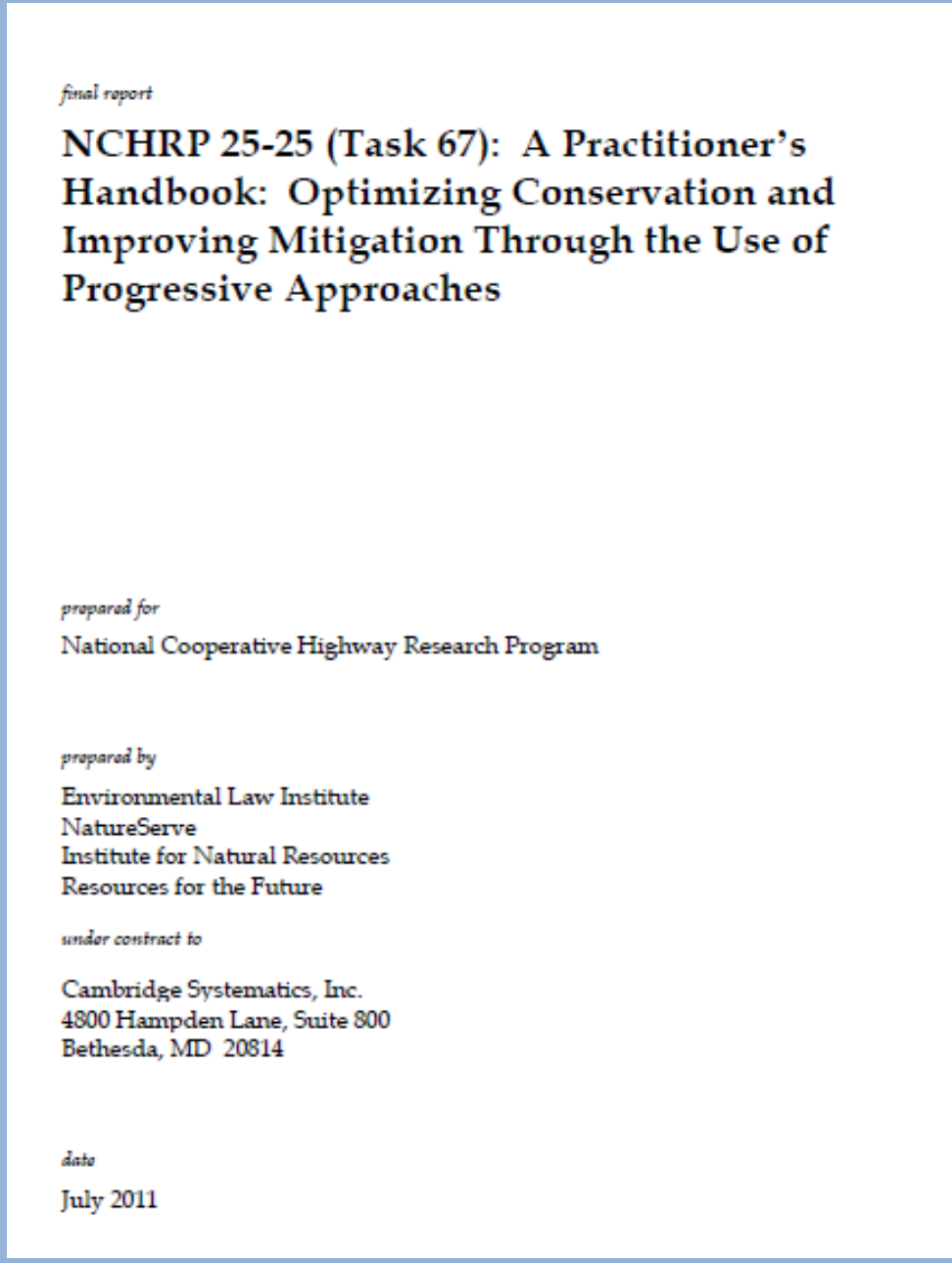
- Gather and integrate conservation data to represent a Regional Ecological Framework
- Gather information on current and future development scenarios for infrastructure, land use, and other disturbances.
- Intersect the REF with the scenarios to quantify impacts
- Guide transportation decision-making at all stages of transportation planning and development, and allow impacts to be assessed and quantified early in the transportation planning and project delivery process.
- Use to create land use and transportation plans that avoid impacts and/or target mitigation to address ecological priorities and achieve better ecosystem outcomes.

“Progressive Mitigation”

Traditional =
Project by project

Midway =
Some sort of evaluation of landscape setting, single function assessment

Progressive = robust ecosystem analysis, multispecies, mitigation to contribute to the conservation priorities



final report

NCHRP 25-25 (Task 67): A Practitioner's Handbook: Optimizing Conservation and Improving Mitigation Through the Use of Progressive Approaches

prepared for

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4800 Hampden Lane, Suite 800
Bethesda, MD 20814

date

July 2011

Progressive Mitigation is Ideal

- Leads to better environmental and economic outcomes
- It requires a landscape, multispecies assessment and prioritization of ecosystem services
- Up-front investment in analysis and planning leads to long-run permit cost savings and other environmental outputs.

The Practice – In California

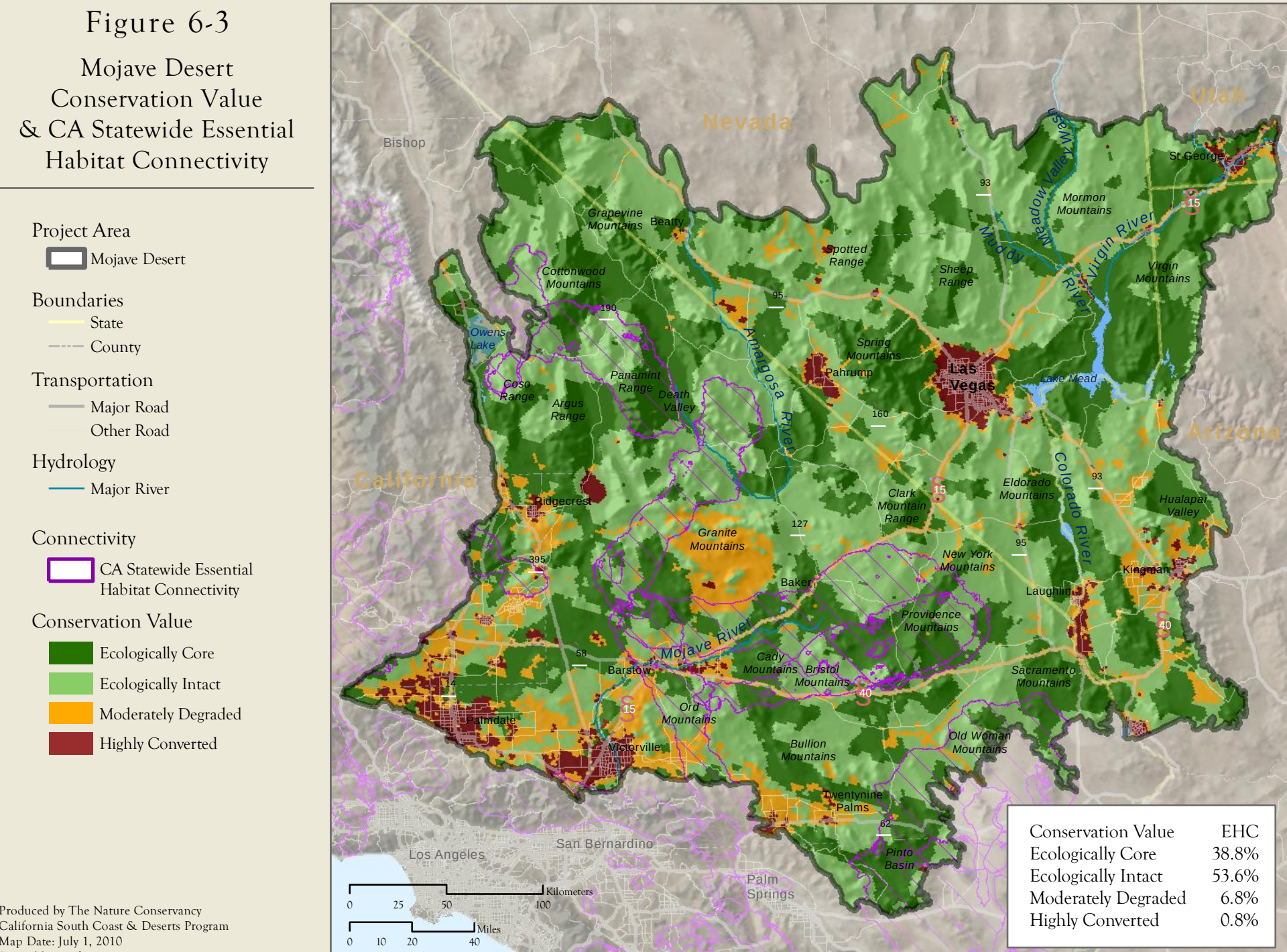
- It’s difficult
- It’s possible
- It has high leverage
- It starts with a greenprint

Regional Greenprint

- Science based and data rich
- Comprehensive to identify natural systems and working lands
- Flexible to reflect regional conservation goals and opportunities
- Reflective of the value of nature and working lands to healthy, vibrant communities
- Action oriented, implementable and influential
- Dynamic

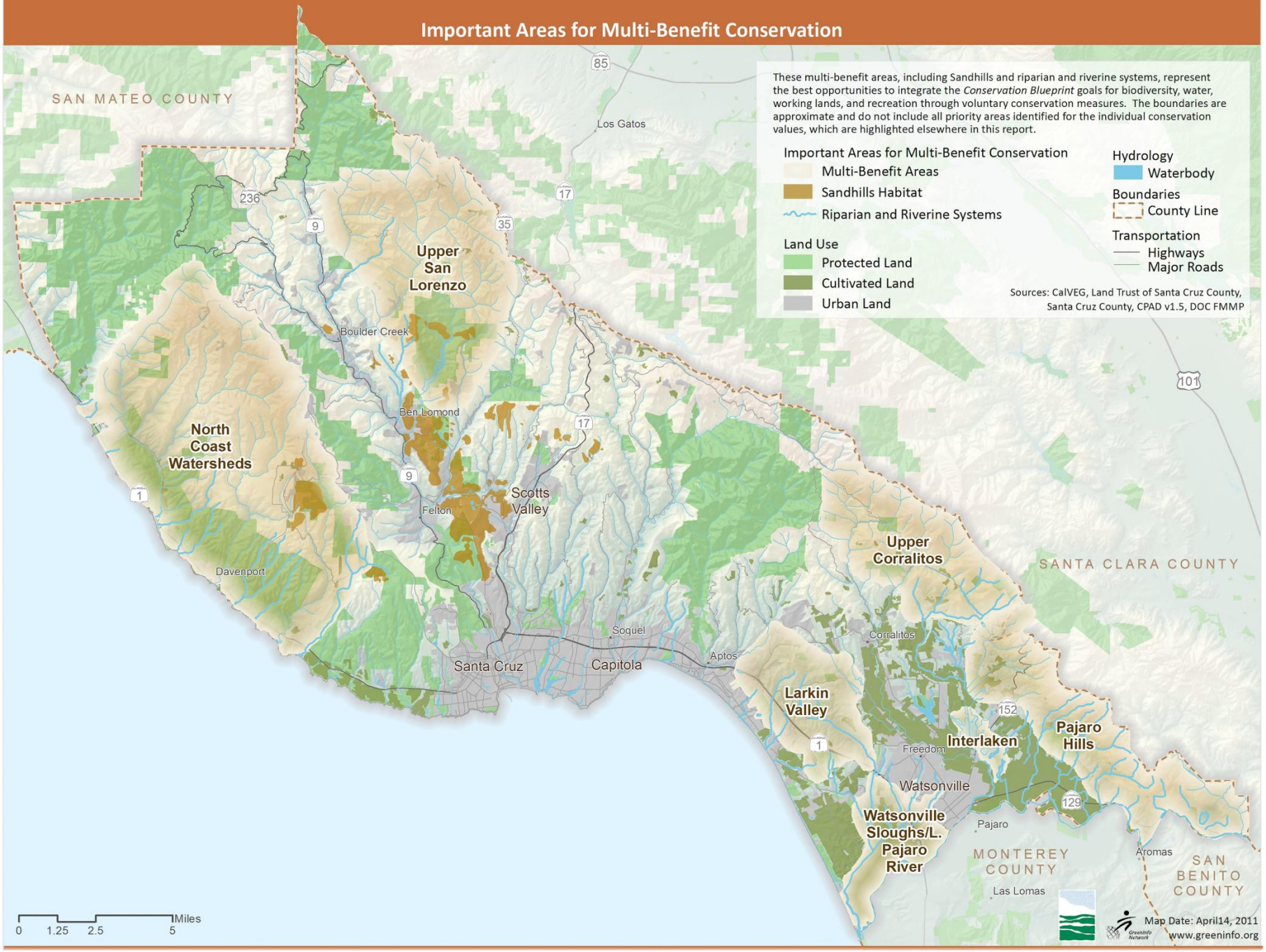
Figure 6-3

Mojave Desert Conservation Value & CA Statewide Essential Habitat Connectivity

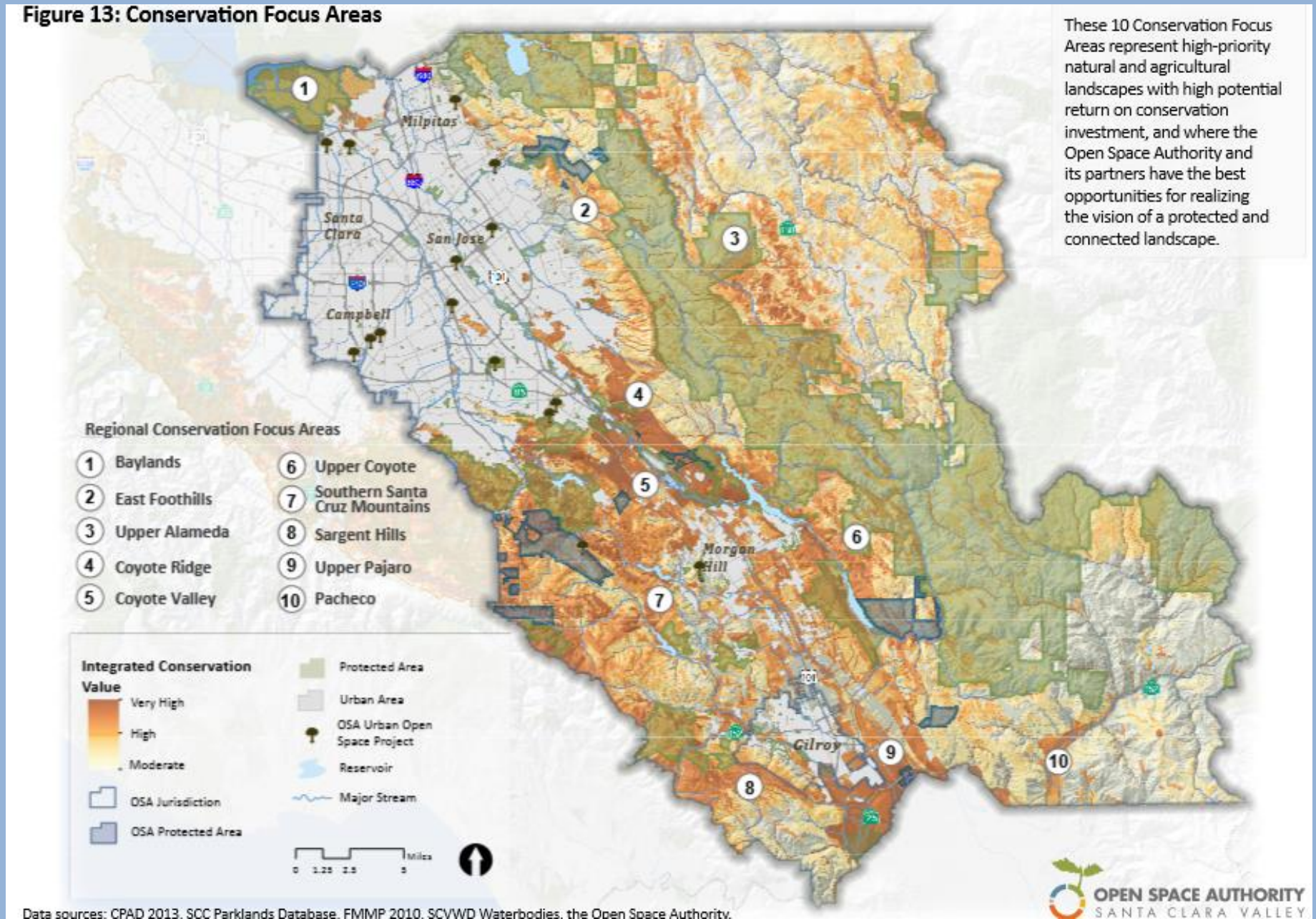


Produced by The Nature Conservancy
California South Coast & Deserts Program
Map Date: July 1, 2010

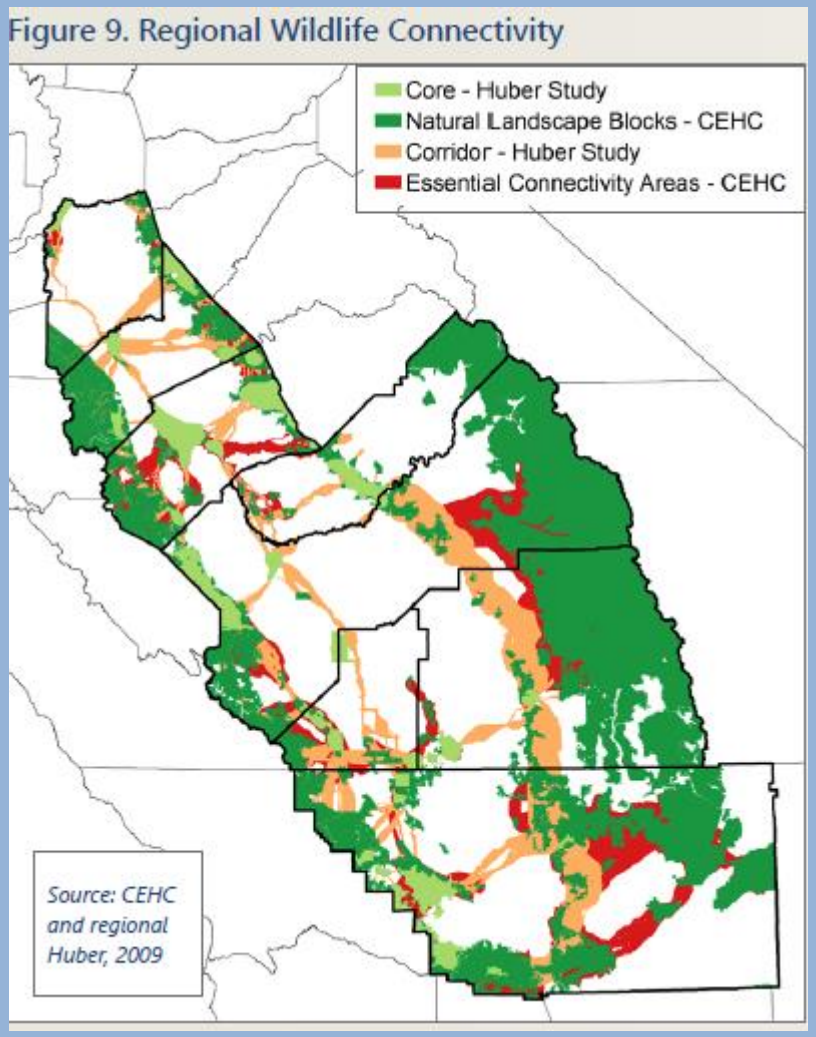
Important Areas for Multi-Benefit Conservation

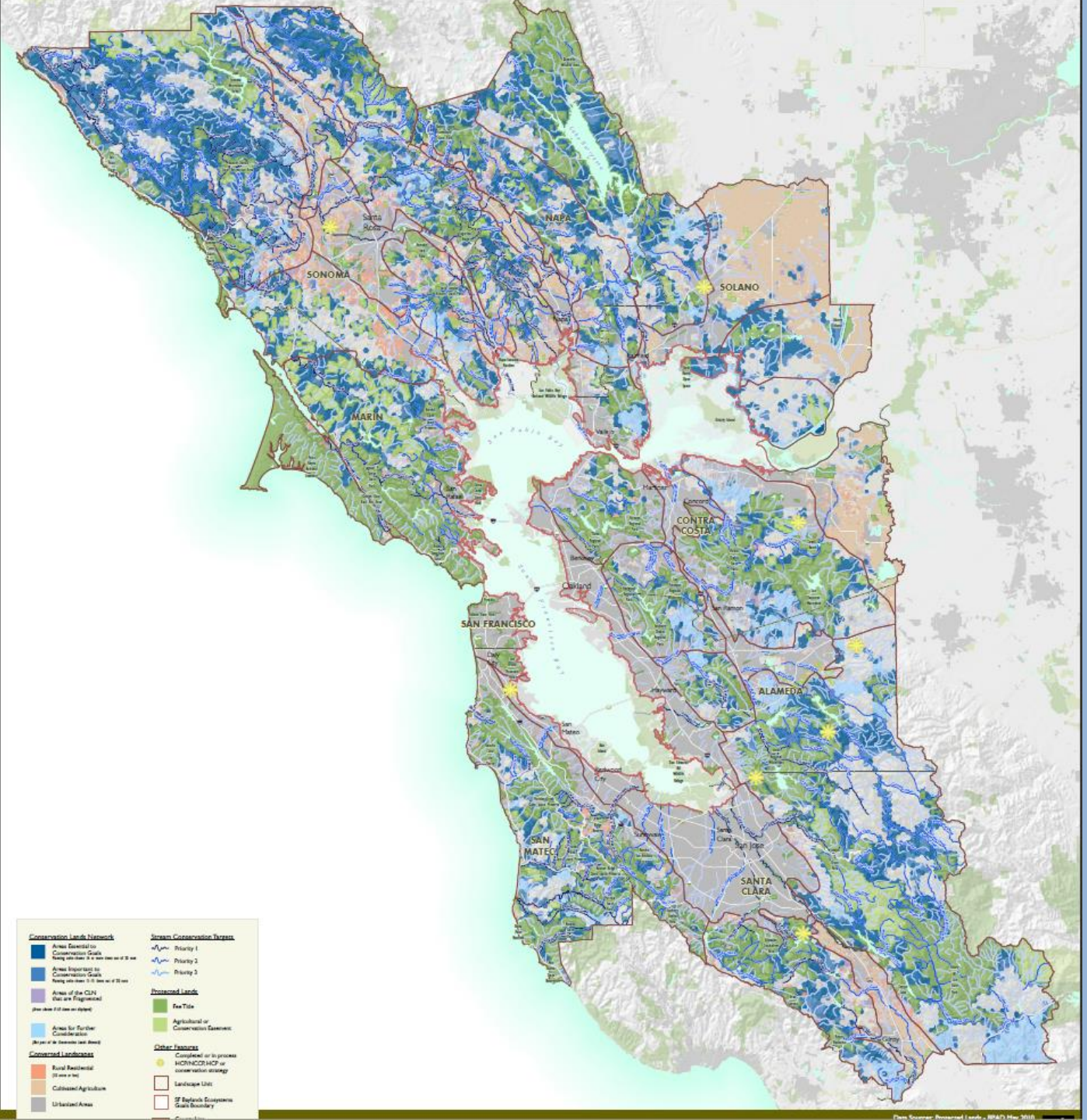


Santa Clara Valley Open Space Authority



San Joaquin Valley Regional Greenprint





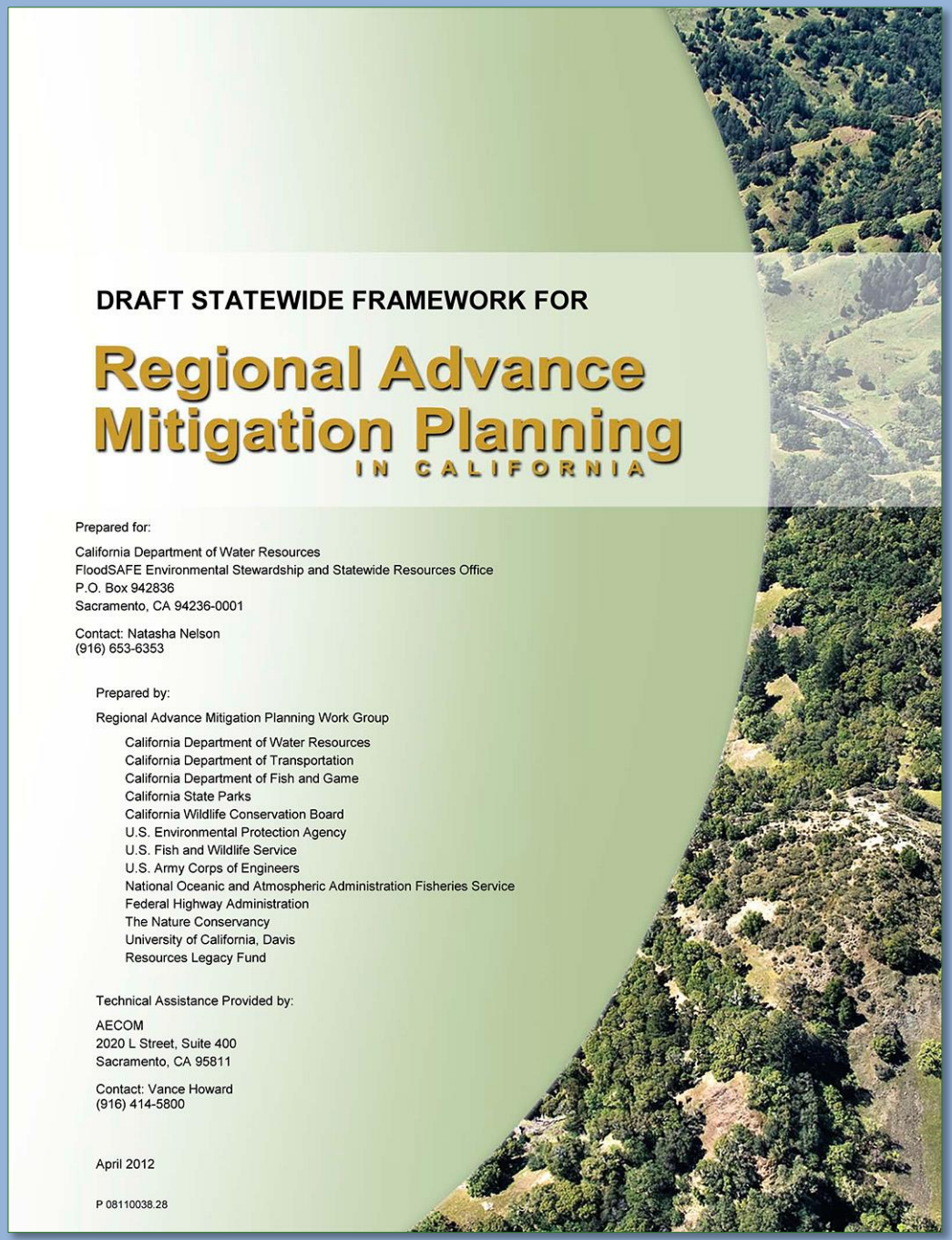
San Francisco Bay Area Conservation Lands Network

Regional Advance Mitigation Planning

Goal: align mitigation hierarchy and conservation priorities to avoid impacts, achieve meaningful conservation outcomes and expedite project delivery

"Regional:" consider multiple projects and cumulative impacts, align with regional conservation priorities

"Advance:" integrate conservation in planning and project design and mitigate potential project impacts before they occur



DRAFT STATEWIDE FRAMEWORK FOR

Regional Advance Mitigation Planning IN CALIFORNIA

Prepared for:

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Regional Advance Mitigation Planning Work Group

- California Department of Water Resources
- California Department of Transportation
- California Department of Fish and Game
- California State Parks
- California Wildlife Conservation Board
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Army Corps of Engineers
- National Oceanic and Atmospheric Administration Fisheries Service
- Federal Highway Administration
- The Nature Conservancy
- University of California, Davis
- Resources Legacy Fund

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April 2012

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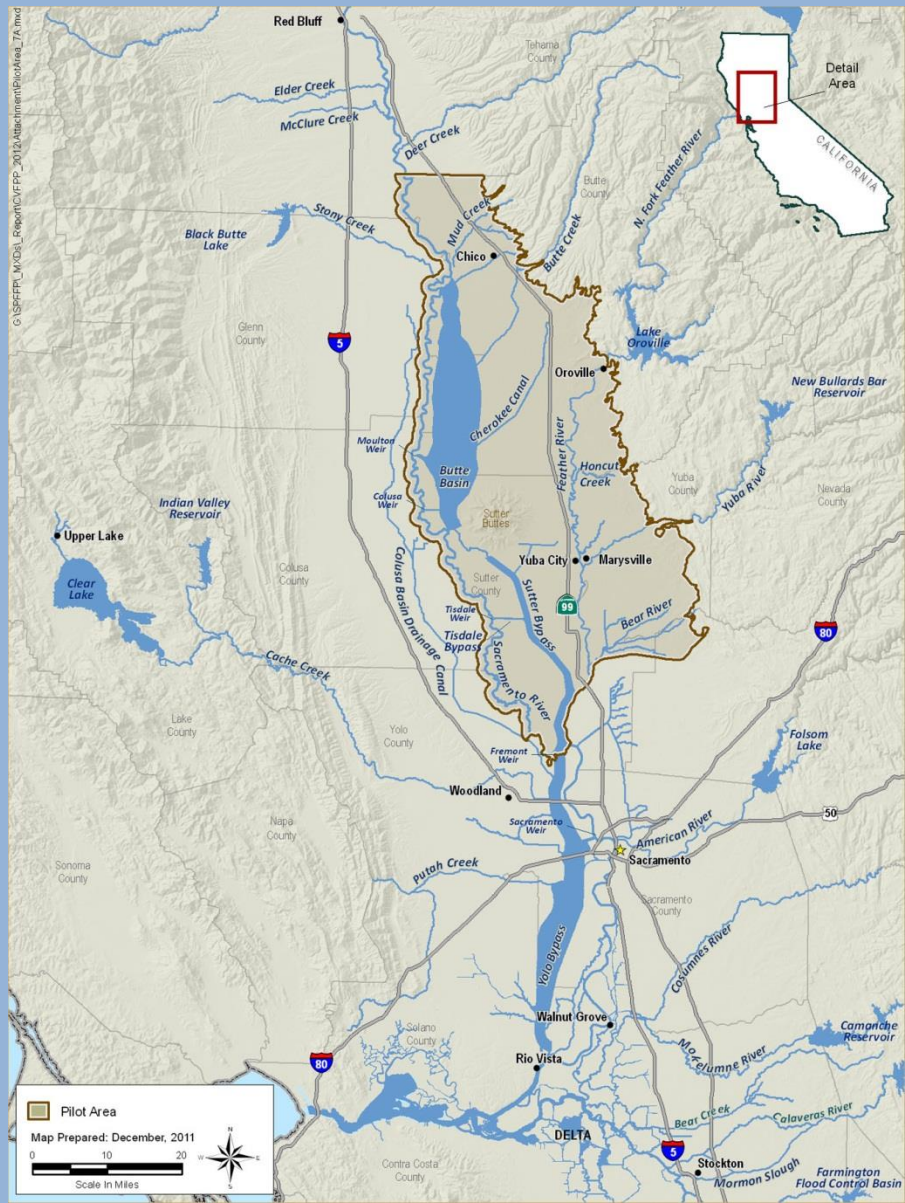
RAMP – Central Valley and Sacramento Valley Pilot Project (Caltrans & DWR)



RAMP Essential Elements

- Multiple agency coordination & cooperation
- Reliable, robust and flexible funding stream, available early
- Institutional and political support
- Regulatory support for early mitigation
- Sufficient information for analyses
- Agreed upon science and planning methodologies

RAMP Fundamental Challenges

- Funding strategies
  - Capital funding needed in advance
  - Investment in planning
  - Divorce mitigation dollars from projects
- Agency capacity, structure and culture
  - Align staffing to approach
- Policy needs
  - Allow programmatic mitigation in advance
- Sufficient available information

What RAMP Can Mean to You

- Integrating conservation priorities into a Regional Greenprint/Assessment
- Robust funding stream for land acquisition and restoration
- More systematic and rational, less ad hoc mitigation
- More flexibility in transactions

Questions?

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